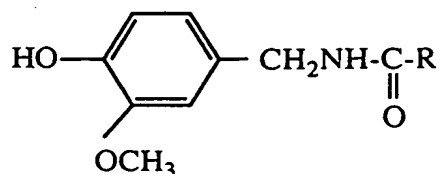

**Japanese Patent Application, Second Publication (B2),
No. Sho 63 - 56 206**

Second Publication Date: November 7, 1988

Title of the Invention: Skin agent for external use comprising Japanese pepper
Application Number: Sho 55 - 129 759
Application Date: September 17, 1980
First Publication Number: Sho 57 - 53 407
First Publication Date: March 30, 1982
Inventors: Kazuro Mizuyama
Yuichiro Kubo
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Applicant: Kao Corporation
Citation: A picture book of Japanese and Chinese medicine (I), Tsuneo Nanba,
Hoikusha Corporation, pp. 207 - 209 (Published on May 1, 1980)

Claims:

1. A skin agent for external use characterized in that it comprises a thermal stimulating agent and an essence obtained by extracting a fruit of Japanese pepper or a dried and pulverized material thereof with an alcoholic solvent.
2. A skin agent for external use according to Claim 1, wherein the thermal stimulating agent is a powder of red pepper or an essence of red pepper.
3. A skin agent for external use according to Claim 1, wherein the thermal stimulating agent corresponds to one or more N-acylvanillylamide represented by the following formula:



wherein R represents an alkyl group having 5 to 11 carbon atoms.

Detailed Description of the Invention

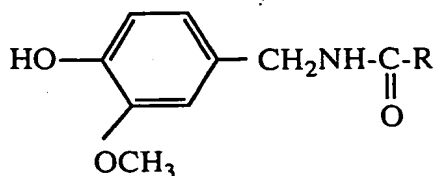
The present invention relates to a skin agent for external use comprising a thermal stimulating agent, and in particular, relates to a skin agent for external use comprising a thermal stimulating agent and an essence of Japanese pepper as an alleviating agent.

It has been known for a long time that powder of red pepper (*Capsicum*), essence of red pepper, synthesized capsaicin, and the like impart to the skin a thermal feeling by applying them to the skin. Therefore, they are employed in a combination with a skin agent for external use as a remedial agent for the purpose of countering inflammation or killing pain with regard to diseases such as neuralgia, rheumatism, stiff shoulders, lumbago, and the like. In commercially available thermal poultices, powder of red pepper, essence of red pepper (capsaicin as an active ingredient), or nonylic vanillylamide (a synthesized capsaicin) are included in a given amount.

These thermal stimulating agents in a concentration of less than a certain amount cannot act as a thermal stimulating agent since the thermal feeling on the skin is extremely reduced. On the other hand, in the case where thermal poultices with the proper amount of these thermal stimulating agents described above are applied to the skin, there is a disadvantage in that normal people, as well as people with sensitive skin, and people who have low resistance to skin stimulation may begin to feel the thermal feeling over the passage of time, and subsequently they may feel pain rather than the appropriate thermal feeling, or may suffer from flaring or inflammation on the skin wherein the thermal stimulating agents are applied, while the thermal feeling is not felt immediately after thermal poultices are applied to the skin.

As a result of diligent study by the present inventors in order to improve the disadvantages in the conventional skin agents for external use comprising thermal stimulating agents, the present inventors have discovered that the object can be achieved by adding an essence of Japanese pepper thereto. The present invention is based on this discovery.

The thermal stimulating agents employed in the present invention include a powder of red pepper, an essence of red pepper, and a synthesized capsaicin. It is known that the as the thermal stimulating ingredients in a powder of red pepper and an essence of red pepper, there can be mentioned not only capsaicin (8-methyl-trans-6-nonenic vanillylamide) as a main ingredient but also dihydrocapsaicin that is the dihydro derivative of capsaicin, nordihydrocapsaicin, homodihydrocapsaicin, and the like (see, for example, *Agr. Biol. Chem.* 34, No. 2, 248-256 (1970)). In addition, as the synthesized capsaicins, there can be mentioned, other than the compounds described above, N-acylvanillylamides represented by the following formula:



wherein R represents an alkyl group having 5 to 11 carbon atoms (see, for example, Japanese Patent Application, Second Publication, No. Sho 44 - 4 776).

In these thermal stimulating ingredients, an essence of red pepper and nonylic vanillylamide (in the formula described above, R is an alkyl group having 8 carbon atoms) are commercially available, and therefore, they are easily available and preferable.

The essence of Japanese pepper employed in the present invention is a product which is obtained by extracting a fruit of Japanese pepper or a powder of Japanese pepper prepared by drying and pulverizing the fruit of Japanese pepper. As an extraction solvent, a lower alcohol such as methanol, ethanol, or the like, and a mixture of a lower alcohol and water may be employed. In addition, the extract may be further extracted with an aromatic hydrocarbon such as benzene or the like.

In the skin agents for external use according to the present invention, the essence of Japanese pepper can be included in an amount sufficient to alleviate the skin stimulation caused by the capsaicin ingredients. In the case where an essence of red pepper or a powder of red pepper are employed as the thermal stimulating ingredients, the essence of Japanese pepper can be employed in an amount of approximately 0.05 to 100 times by weight based on the weight of the red pepper, and preferably in an amount of approximately 0.5 to 30 times by weight based on the weight of the red pepper. In the case where a synthesized capsaicin such as nonylic vanillylamide or the like are employed as the thermal stimulating ingredients, the essence of Japanese pepper can be employed in an amount of approximately 10 to 1000 times by weight based on the weight of the red pepper, and preferably in an amount of approximately 50 to 300 times by weight based on the weight of the red pepper. Needless to say, the amount of Japanese pepper may be varied depending on the intense degree of the skin stimulation of the employed thermal stimulating agents and the concentration of the active ingredients in the Japanese pepper. The amount of the thermal stimulating agents may be varied over a wide range, according to the amount of the active ingredients, intensity of the thermal stimulation, or the desired formulations. In general, in the case where an essence of red pepper or a powder of red pepper are employed as the thermal stimulating ingredients, it can be employed in an amount of 0.05% to 10% by weight based on the weight of the formulation, and preferably in an amount of 0.1% to 2% by weight based on the weight of the formulation. In the case where a synthesized capsaicin such as nonylic vanillylamide or the like are employed as the thermal stimulating ingredients, it can be employed in an amount of 0.005% to 0.3% by weight based

on the weight of the formulation, and preferably in an amount of 0.01% to 0.1% by weight based on the weight of the formulation.

As an example of the formulations of the skin agents for external use according to the present invention, there can be mentioned various skin formulations for external use such as a plaster, a poultice, a liniment, a lotion, a salve, or the like. Any bases employed in these formulations can be employed.

According to the present invention, a skin agent for external use can be obtained which affords an appropriate thermal feeling without causing any pain by alleviating the excessive skin stimulation by the thermal stimulating agents included in the skin agent for external use and which reduce the flaring and inflammation on the skin wherein the agents are applied. Such skin agents for external use comprising thermal stimulating agents have an advantage in that no pain or inflammation are caused even if the skin agents for external use are applied every day for the purpose of treating diseases such as neuralgia, rheumatism, stiff shoulders, lumbago, and the like. It has been discovered that such advantageous effects can be obtained specifically by an essence of Japanese pepper according to the present invention, while these effects cannot be obtained by the similar plant essences such as *Gardenia jasminoides* Ellis, *Pinelliae Tuber*, *Myrica rubra siebold et Zuccarin*, *Zanthoxylum schinifolium*, ginger, *Asiasari Radix*, and the like.

The present invention will be explained with examples. The present invention is not limited to these examples.

Reference Example

Preparation of an essence of Japanese pepper

Pulverized powders of the dried fruits of Japanese pepper (500 g) were extracted with ethanol (1.5 L) by refluxing the mixture for 6 hours. After the solids were filtered, the ethanol was evaporated to obtain 84.4 g of an essence (an essence extracted by ethanol). One portion was set aside for tests. The remainder was dissolved in methanol (500 mL), and extracted with hexane (500 mL) three times. The methanol layer was concentrated into a volume of 200 mL and water (800 mL) was added thereto. Subsequently, the organic layer was extracted with benzene (500 mL) three times. The solvent of the benzene layer was evaporated to obtain 18.5 g of an essence (an essence extracted by benzene). The solvent of the hexane layer was evaporated to obtain 15.7 g of a residue. According to purification by TLC, it was clarified that the residue consists essentially of essential oil ingredients such as citronellal, citronellol, graniol, and the like. It was clarified that the essence extracted by benzene includes approximately 8% of an amide of Japanese pepper.

Test Example 1

Thermal poultices having the following compositions were prepared.

Thermal stimulating agent	Product of the present invention	Comparative product
Essence of red pepper	0.12% by weight	0.12% by weight
Nonylic vanillylamide	0.035% by weight	0.035% by weight
Essence of Japanese pepper*	5.00% by weight	-
Base for poultice	Remainder	Remainder
Essence of Japanese pepper*:	the essence obtained by extraction with ethanol described in the Reference Example	

The thermal poultices described above (300 mg / cm²) were applied on the shoulders of eight subjects. Subsequently the degrees of thermal feeling and pain after 5 minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes, and 1 hour were evaluated by a sensory test. The results are shown in Table 1. The flaring on the skin where the thermal poultice had been applied for an hour and subsequently removed was observed. The results are shown in Table 1. The degrees of thermal feeling and pain was evaluated by 5 grades (0: no thermal feeling, only application feeling; 1: weak thermal feeling; 2: appropriate thermal feeling, no pain; 3: thermal feeling, pain, tolerable for application; 4: strong pain, intolerable for application). For each product, the average points calculated by the total points obtained from the eight subjects are shown. With regard to the degrees of thermal feeling and pain, the average point score of approximately 2 is the best. The degree of flaring was evaluated by 4 grades (1: no flaring is observed; 2: flaring in dots is observed on the skin wherein the poultice was applied; 3: flaring is observed over all the skin where the poultice was applied; 4: flaring is observed not only over all the skin where the poultice was applied, but also over the skin beyond the area where the poultice was applied). For each product, the average points are calculated from the total points obtained from the eight subjects and are shown.

Table 1

Thermal poultice	degree of thermal feeling and pain						degree of flaring
	after	after	after	after	after	after	
	5 min.	10 min.	15 min.	20 min.	30 min.	1 h.	
Product of the present invention	0.8	1.3	1.6	1.8	2.0	1.9	2.4
Comparative product	1.0	1.5	2.4	2.6	2.8	3.1	3.0

Test Example 2

Essence of red pepper	0.12% by weight
Nonylic vanillylamide	0.035% by weight
Essence of plant extract	see Table 2
Base for poultice	remainder

	total 100% by weight

The thermal poultices having the compositions described above were prepared. The degrees of thermal feeling and pain (after 30 min. and after 60 min.) and the degree of flaring on the skin where the poultice was applied were evaluated (subjects: 6) in the same manner as that of Test Example 1, compared to the control (without the essence of plant extract). The differences between the value obtained from each poultice and the value obtained from the control are shown in Table 2.

Table 2

Essence of plant extract	Amounts (% by weight)	Degree of thermal feeling and pain (versus control)		Degree of flaring (versus control)
		after 30 min.	after 60 min.	
Gardenia jasminoides Ellis	5.0	0.0	-0.0	-0.3
Pinelliae Tuber	5.0	+0.3	+0.1	0.0
Myrica rubra siebold et Zuccarin	5.0	+0.5	+0.5	+0.7
Zanthoxylum schinifolium	4.0	+0.8	+0.5	+0.2
Ginger	5.0	+0.9	+0.5	+0.7
Asiasari Radix	5.0	+0.5	+0.2	+0.3

Test Example 3

The thermal poultice having the composition described below (Poultice A) was prepared.

Thermal stimulating agent	Product of the present invention
Essence of red pepper	0.12% by weight
Nonylic vanillylamide	0.035% by weight
Essence of Japanese pepper**	1.00% by weight
Base for poultice	remainder

	total 100% by weight

Essence of Japanese pepper**: an essence obtained by extraction with benzene described in Reference Example 1

Next, thermal poultices having the thermal stimulating ingredients described above in the reduced amounts of 80% thereof (Poultice B), 60% thereof (Poultice C), and 40% thereof (Poultice D), without an essence of Japanese pepper, and the remainder of the bases for poultice for a total 100% by weight, were prepared.

The poultices (300 mg / cm²) were applied to the subjects: 16 subjects for Poultice B; 17 subjects for Poultice C; 18 subjects for Poultice D; the all subjects for Poultice A as a control. Subsequently the degrees of thermal feeling and pain after 10 minutes, 20 minutes, 30 minutes, and 1 hour were evaluated by a sensory test. The flaring on the skin wherein the thermal poultice had been applied for an hour and subsequently removed was observed. The evaluation methods are the same as those described in Test Example 1. The results are shown in Table 3.

Table 3

Thermal poultice	Degrees of thermal feeling and pain (average value)				Rate of subjects who feel no thermal feeling:		Degree of flaring
	after 10 min.	after 20 min.	after 30 min.	after 1 h.	after 30 min. (%)	after 1 h. (%)	
Poultice A (present invention)	1.2	2.1	2.3	2.4	9	0	1.8
Poultice B (comparative product)	1.0	2.0	2.6	2.9	13	0	2.4
Poultice C (comparative product)	1.3	2.3	2.5	2.4	6	0	2.2
Poultice D (comparative product)	1.0	1.6	1.9	2.2	39	11	1.2

It is apparent from this Table that in the case of employing the amounts of the thermal stimulating ingredients reduced to 80% thereof (Poultice B), 60% thereof (Poultice C), and 40% thereof (Poultice D), without an essence of Japanese pepper, the rate of the subjects who do not feel thermal feeling at all is rapidly reduced, while the degrees of pain and flaring are appropriately reduced. On the other hand, in the case of the thermal poultice A with an essence of Japanese pepper according to the present invention, with regard to the degree of pain, Poultice A exhibits a degree of pain as small as or smaller than that obtained by Poultice C having a 60%-reduced amount of the thermal stimulating ingredients, and the degree of flaring is considerably reduced. If the reduction of the degree of flaring is carried out only by reducing the amounts of capsaicin and the like without adding an essence of Japanese pepper,

the rate of the subjects who do not feel the thermal feeling at all is greatly increased, and for this reason, such compositions are not valuable as a commercial products.

Example 1: Thermal Poultice

Essence of red pepper	0.5% by weight
Essence of Japanese pepper	3.5% by weight
Base for poultice (gelatin, kaolin, and the like)	remainder

	total 100% by weight

The ingredients were added to the base for poultice and the entire mixture was mixed and kneaded, and subsequently the kneaded mixture was applied to a piece of cloth to obtain a thermal poultice.

As the essence of Japanese pepper, the essence extracted with ethanol described in Reference Example 1 was employed. In the Examples in the following, the same essences were employed.

Example 2: Thermal Poultice

Nonylic vanillylamide	0.05% by weight
Essence of Japanese pepper	7.0% by weight
Base for poultice	remainder

	total 100% by weight

Example 3: Thermal Poultice

Nonylic vanillylamide	0.035% by weight
Essence of red pepper	0.12% by weight
Essence of Japanese pepper	5.0% by weight
Base for poultice	remainder

	total 100% by weight

Example 4: Thermal Plaster

Essence of red pepper	0.7% by weight
Essence of Japanese pepper	5.0% by weight
Base for plaster (naturally occurring gum, zinc oxide, liquid paraffin)	remainder

total 100% by weight

Example 5: Thermal Plaster

Nonylic vanillylamide

0.035% by weight

Essence of Japanese pepper

5.0% by weight

Base for plaster

remainder

total 100% by weight

Example 6: Thermal Liniment

Essence of red pepper

0.28% by weight

Essence of Japanese pepper

2.8% by weight

Methyl salicylate

5.0% by weight

Liquid for liniment (including
ethanol, polyethylene glycol, and water)

remainder

total 100% by weight

⑬ Int. Cl.

識別記号

庁内整理番号

⑭ 公告 昭和63年(1988)11月7日

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発明の数 1 (全5頁)

⑮ 発明の名称 サンショウエキス配合皮膚外用剤

⑯ 特 願 昭55-129759

⑰ 公 開 昭57-53407

⑱ 出 願 昭55(1980)9月17日

⑲ 昭57(1982)3月30日

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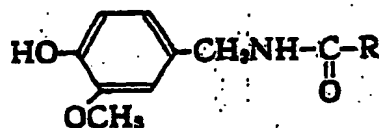
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㉗ 特許請求の範囲

1 温感刺激剤と、サンショウの果実又はその乾燥粉砕物をアルコール性溶媒にて抽出して得られるエキスを配合したことを特徴とする皮膚外用剤。

2 温感刺激剤がトウガラシ末又はトウガラシエキスである特許請求の範囲第1項記載の皮膚外用剤。

3 温感刺激剤が、次の式で表されるN-アシルワニルアミドの1種又は2種以上である特許請求の範囲第1項記載の皮膚外用剤。



(式中Rは炭素数5~11のアルキル基を示す)。

発明の詳細な説明

本発明は温感刺激剤を配合した外用剤に関し、詳しくは、温感刺激剤とその緩和剤としてのサンショウエキスを配合した外用剤に関する。

トウガラシ末、トウガラシエキス、合成カプサイシン等は、皮膚に適用することにより皮膚に温熱感を与えることは古くから知られ、神経痛、リウマチ、肩こり、腰痛等の疾患に対して、消炎あ

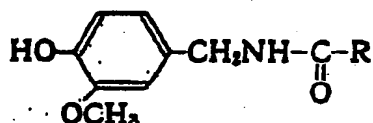
るいは鎮痛の目的で治療薬として皮膚外用剤に添加配合されて使用されている。現在の市販の温感パップ剤等には、温熱感を与える為に、トウガラシ末、トウガラシエキス(有効主成分カプサイシン)もしくはノニル酸ワニルアミド(合成カプサイシン)の一定量が配合されている。

これらの温感刺激剤は、一定量以下の添加濃度では、皮膚の温熱感が極端に低くなり、温感刺激剤としては作用しなくなる。しかし一方で、上記配合量では、皮膚感受性の高い人、及び皮膚刺激に対して弱い人は勿論のこと、一般の人でも鈍感パップ剤を貼布すると、貼布直後はあまり温熱感を感じないが、時間の経過と共に感じ始め、次いで快適な温熱感を通り越して痛みを感じ、また貼布部位に発赤、炎症を起こすという欠点が見られる。

本発明者等は、温感刺激剤を配合した温感刺激性剤外用剤のかかる欠点を改良すべく鋭意検討研究をした結果、サンショウエキスを加えればその目的が達成されることを見出し本発明を完成した。

本発明で使用される温感刺激剤には、トウガラシ末、トウガラシエキス及び合成カプサイシンが含まれる。トウガラシ末、トウガラシエキス中

は、温感刺激性成分としては、主成分たるカプサイシン (Capsaicin, 8-メチル-8-トランス-6-ノネン酸ワニルアミド) の他に、そのジヒドロ体であるジヒドロカプサイシンや、ノルジヒドロカプサイシン、ホモジヒドロカプサイシン等を含むことが知られている (例えば、Agr. Biol. Chem. 34, No. 2, 248~256(1970))。また合成カプサイシンには、これらの成分の合成によるものの他に、下式で表わされるN-アシルワニルアミド類がある (例えば特公昭44-4776)。



(式中Rは炭素数5~11のアルキル基を示す)

これらの温感刺激性成分のうち、トウガラシエキス及びノニル酸ワニルアミド (上記式中Rが炭素数8のアルキル基) は市販されており、入手し易く好ましいものである。

本発明で使用されるサンシヨウエキスはサンシヨウの果実又はその乾燥粉碎物であるサンシヨウ末を抽出して得られるものである。抽出溶媒としてはメタノール、エタノール等の低級アルコール類、および低級アルコールと水との混合物が用いられる。また、その抽出物をさらにベンゼン等の芳香族炭化水素類で抽出してもよい。

本発明の皮膚外用剤においては、サンシヨウエキス配合量は、カプサイシン成分の皮膚刺激を緩和するのに十分な量使用すれば良いが温感刺激成分としてトウガラシエキス又はトウガラシ末を使用した場合は、その約0.05~100重量倍、好ましくは約0.5~30重量倍が適当であり、また温感刺激剤としてノニル酸ワニルアミド等の合成カプサイシンを使用した場合には、約10~1000重量倍、好ましくは約50~300重量倍が適当である。勿論上記の量は、使用する温熱刺激剤の皮膚刺激性の強さの程度及び、サンシヨウエキス中の有効成分の濃度によつて変わり得る。温感刺激剤の配合量は、その有効成分の含有量、温感刺激の強さ等により、又目的とする製剤の形態等により、広い範囲にわたつて変わり得るが、一般的には、トウガラシ末又はサンシヨウエキスを使用する場合には、製剤中0.05~10重量%、特に0.1~2重量%、またノニル酸ワニルアミド等の合成カプサ

イシンを使用する場合には、0.005~0.3重量%、特に0.01~0.1重量%が適当である。

本発明の皮膚外用剤の剤型としては、硬膏剤、パップ剤、リニメント剤、ローション剤、軟膏剤、プラスター等のいかなる皮膚外用製剤が挙げられ、これらに使用されるいずれの基剤も使用することができる。

本発明によれば、温感刺激剤を配合した温感刺激性外用剤の過度の皮膚刺激を緩和して痛みをなくすと共に、適用部位の発赤、炎症を少なくして、快適な温熱感を有する外用剤が得られた。このような温感刺激性外用剤は、神経痛、リウマチ、肩こり、腰痛等の治療に、連日使用しても痛み、炎症を伴わないという利点を有する。このような効果は、同じ植物エキスであつても、サンシシ (山梔子)、ハンゲ (半夏)、ヨウバイヒ (楊梅皮)、イヌザンシヨウ (犬山椒)、シヨウキヨウ (生薑)、サイシン (細辛) 等には見られず、本発明のサンシヨウエキスに特有なものであることがわかつた。

以下に例を挙げて説明するが、本発明はこれらの例に限定されるものではない。

参考例

サンシヨウエキスの製造

サンシヨウの果実の乾燥粉碎物500gをエタノール1.5ℓ中で6時間還流抽出し、固形分をろ過し、エタノールを留去してエキス (エタノール抽出エキス) 84.4gを得た。一部を試験用に残し、残りの大部分をメタノール500mlに溶解し、n-ヘキサン500mlで3回抽出した。メタノール層を200mlまで濃縮し、水800mlを加えて、ベンゼン500mlで3回抽出した。ベンゼン層の溶媒を留去してエキス (ベンゼン抽出エキス) 18.5gを得た。ヘキサン層の溶媒を留去すると15.7gの残渣が得られ、薄層クロマトグラフにより、主にシトロネラル、シトロネロール、グラニオール等の精油成分からなるものであることがわかつた。ベンゼン抽出エキス中には、約8%のサンシヨウアミドが含まれていることがわかつた。

試験例 1

下記の組成を有する温感パップ剤を調整した。

5

6

温感刺激剤	本発明品	比較品
トウガラシエキス	0.12 wt%	0.12 wt%
ノニル酸ワニリルアミド	0.035 //	0.035 //
サンシヨウエキス	5.00 //	—
パップ剤膏体	残部	残部
	計 100	計 100

サンシツウエキス[※]：参考例のエタノール抽出エキス

上記温感パップ剤 (300mg/cm²) を被検者 8 人の肩に貼り、5分、10分、15分、20分、30分、1時間後の温感・痛みの程度を官能検査により評価した。結果を表 1 に示す。また 1 時間経過してパップ剤を除去した直後の貼布部位の発赤を観察した。結果を表 1 中に示す。温感・痛みの程度は、*

表

1

温感パップ剤	温感・痛みの程度						発赤の程度
	5分後	10分後	15分後	20分後	30分後	1時間	
本発明品	0.8	1.3	1.6	1.8	2.0	1.9	2.4
比較品	1.0	1.5	2.4	2.6	2.8	3.1	3.0

試験例 2

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表

2

トウガラシエキス	0.12wt%
ノニル酸ワニリルアミド	0.035wt%
植物抽出エキス	表 2 に示す量
パップ剤膏体	残部
	計100

30

上記組成を有する温感パップ剤を調製し、コントロール (植物抽出エキスを含まないもの) と比較しながら、試験例 1 と同様にして、温感・痛みの程度 (30分後及び60分後)、及び貼布部位の発赤の程度を評価した (被験者 6 人)。各パップ剤のコントロールとの差を表 2 に示す。

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植物エキス	添加量 (wt. %)	温感・痛みの程度 (対コントロール)		発赤の程度 (対コントロール)
		30分後	60分後	
山梔子	5.0	0.0	-0.0	-0.3
半夏	5.0	+0.3	+0.1	0.0
楊梅皮	5.0	+0.5	+0.5	+0.7
犬山椒	4.0	+0.8	+0.5	+0.2
生薑	5.0	+0.9	+0.5	+0.7
細辛	5.0	+0.5	+0.2	+0.3

試験例 3

下記の組成を有する温感パップ剤を調製した (パップ剤 A)

温感刺激剤	本発明品
トウガラシエキス	0.12 wt%
ノニル酸ワニリルアミド	0.035 //
サンシヨウエキスイ ²²	1.00 //
バツブ剤膏体	残 部

計 100

サンシヨウエキスイ²²：参考例1のベン

ゼン抽出エキスイ

次に、上記の温感刺激剤成分をその80% (バツブ剤B)、60% (バツブ剤C)、40% (バツブ剤D) 10に減らし、サンシヨウエキスイを加えずにバツブ剤*

表

3

温感バツブ剤	痛みの程度 (平均値)				温感を全く感じ ない人の割合		発赤の程度
	10分後	20分後	30分後	1時間後	30分後(%)	1時間後(%)	
A(本発明)	1.2	2.1	2.3	2.4	9	0	1.8
B(比 較)	1.0	2.0	2.6	2.9	13	0	2.4
C(//)	1.3	2.3	2.5	2.4	6	0	2.2
D(//)	1.0	1.6	1.9	2.2	39	11	1.2

この表により、温感刺激剤成分をその80%(B)、60%(C)、40%(D)に減少させ、サンシヨウエキスイを加えない場合には、痛みの程度及び発赤の程度はそれなりに減少しているが、温感を全く感じない人の割合が急速に増加することがわかる。サンシヨウエキスイを加えた本発明の温感バツブ剤(A)は、痛みの程度だけを比較した場合は、温感刺激剤成分をその約60%に減らしたものの(C)と同等又はそれよりやや弱いものに相当するが、発赤の程度はかかるかに低くなる。発赤の程度を、サンシヨウエキスイを加えずにカプサイシン類の添加量を減少させることのみによつて下げようとする、温感を全く感じない人の割合が急激に増加し、商品としての価値がなくなってしまう。

実施例1 温感バツブ剤

トウガラシエキス	0.5wt%
サンシヨウエキスイ	3.5wt%
バツブ剤膏体 (ゼラチン、カオリン等)	残 部

計100

バツブ剤膏体にその他の上記成分を混和練合後、布に塗つてバツブ剤となす。

なお、サンシヨウエキスイは参考例1のエタノー

*膏体により全量を100とした温感バツブ剤を調整した。

このバツブ剤 (300mg/cm²) を被検者、Bにつき16人、Cにつき17人、Dにつき18人、Aは対象としてその全員に貼り、10分、20分、30分、1時間毎に温感・痛みの程度を官能検査により評価した。また1時間貼つた後の貼布部位の発赤を観察した。評価方法は試験例1と同じである。結果を表2に示す。

ル抽出エキスイを使用した。以下の実施例においても同じ。

実施例2 温感バツブ剤

ノニル酸ワニリルアミド	0.05wt%
サンシヨウエキスイ	7.0wt%
バツブ剤膏体	残 部

計100

実施例3 温感バツブ剤

ノニル酸ワニリルアミド	0.035wt%
トウガラシエキス	0.12wt%
サンシヨウエキスイ	5.0
バツブ剤膏体	残 部

計100

35 実施例4 温感プラスター

トウガラシエキス	0.7wt%
サンシヨウエキスイ	5.0wt%
プラスター膏体 (天然ゴム、亜鉛華、流動パラフィン)	残 部

計100

プラスター膏体にその他の上記成分を混和練合後、布に均一に塗布し、乾燥してプラスターとなす。

実施例5 温感プラスター

9

10

ノニル酸ワニリルアミド
サンショウエキス
プラスター膏体

0.035wt%

5.0wt%

残 部

計100

サンショウエキス

2.8 //

サルチル酸メチル

5.0 //

リニメント用液剤（エタノール、ポリエチレ
ングリコール及び水を含む）残 部 //

計100

実施例 6 温感リニメント
トウガラシエキス

0.28wt%

5

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EXTERNAL PREPARATION FOR SKIN CONTAINING EXTRACT OF JAPANESE TOOTHACHE TREE
BERRY

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ABSTRACT

PURPOSE: The titled external preparation relieving excess skin stimulation, removing an ache, lightening the rubor and inflammation of the applied part, having pleasant thermal feeling, obtained by blending a thermal irritant with an extract of Japanese toothache tree berry as an emollient.

CONSTITUTION: A thermal irritant, e.g., powdered red pepper, red pepper extract, an N-acylvanilylamide (R is 5-11C alkyl), etc. is blended with an extract of Japanese toothache tree berry. Preferably the amount of the extract of Japanese toothache tree berry is 0.5-30 times as much as that of powdered red pepper or red pepper extract, and 50-300 times as much as that of N-aceylvanilylamide.